Name _____ Date_____

A2CC1: Review Sheet for Exam 1 Quarter 4

Show all work on a ***separate sheet*** of paper. **<u>This review is not comprehensive, be sure to study your old notes, tests, and homework assignments!</u>**

1. What is the vertex of the parabola $y = 2x^2 - 4x - 4$?
2. What are the coordinates of the turning point of the parabola $y - 2 = \frac{-1}{4}(x+5)^2$?
3. What are the coordinates of the vertex of $y = -3(x+4)^2 + 3$?
4. Given the equation $x^2 + 10x - 4y + 9 = 0$, what are the coordinates of the vertex and the focus?
5. Given the equation $x^2 - 12x - 12y + 24 = 0$, what is the equation of the directrix?
6. Given $x^2 + 10x - 8y + 33 = 0$, use the process of completing the square find:
    a. the coordinates of the vertex
    b. the coordinates of the focus
    c. the equation of the directrix
7. What is the distance between the focus and the directrix for the parabola $y = \frac{1}{12}x^2 + 4$?
8. What is the "Locus Definition of a Parabola"?
9. What is an equation of a parabola with a vertex of $(-4,-4)$ and a focus of $(-2,-4)$?
10. What is the equation of the parabola formed when the distance from $(1,-1)$ is the same as its distance from $y = 7$?
11. Find an equation of the parabola with a vertex of $(1,3)$ and a focus of $(1,5)$.
12. Find an equation of the parabola that is equidistant from the point $(1,0)$ and the line $y = -6$.
13. Given a parabola with focus $(-2,1)$ and directrix $y = 3$.
    a. Determine the vertex of the parabola
    b. Write an equation for the parabola

14. The graph of an even function is always symmetrical with respect to what?

15. The graph of an odd function is always symmetrical with respect to what?

16. Determine if each of the following is even, odd, or neither by computing $f(-x)$

    a. $f(x) = x^5 - x^3$

    b. $f(x) = x^4 - x^2 - 6$

    c. $f(x) = \dfrac{x^3 - x}{x^3 + x}$

17. How is the series 3, 5, 7, 9, 11 written in sigma notation?

18. What is $\sum_{x=6}^{10}(3x-2)$ written in expanded form?

19. What is the indicated sum of $\sum_{k=1}^{8} 3 \cdot 2^{k-1}$?

20. Write of the expanded form of $\sum_{n=1}^{7}(-2)^{n-1}$ and then find the value of the sum.